

No. 741,607.

PATENTED OCT. 13, 1903.

W. E. HEATH.
SEALING DEVICE.

APPLICATION FILED OCT. 27, 1902.

NO MODEL.

Fig. 1.

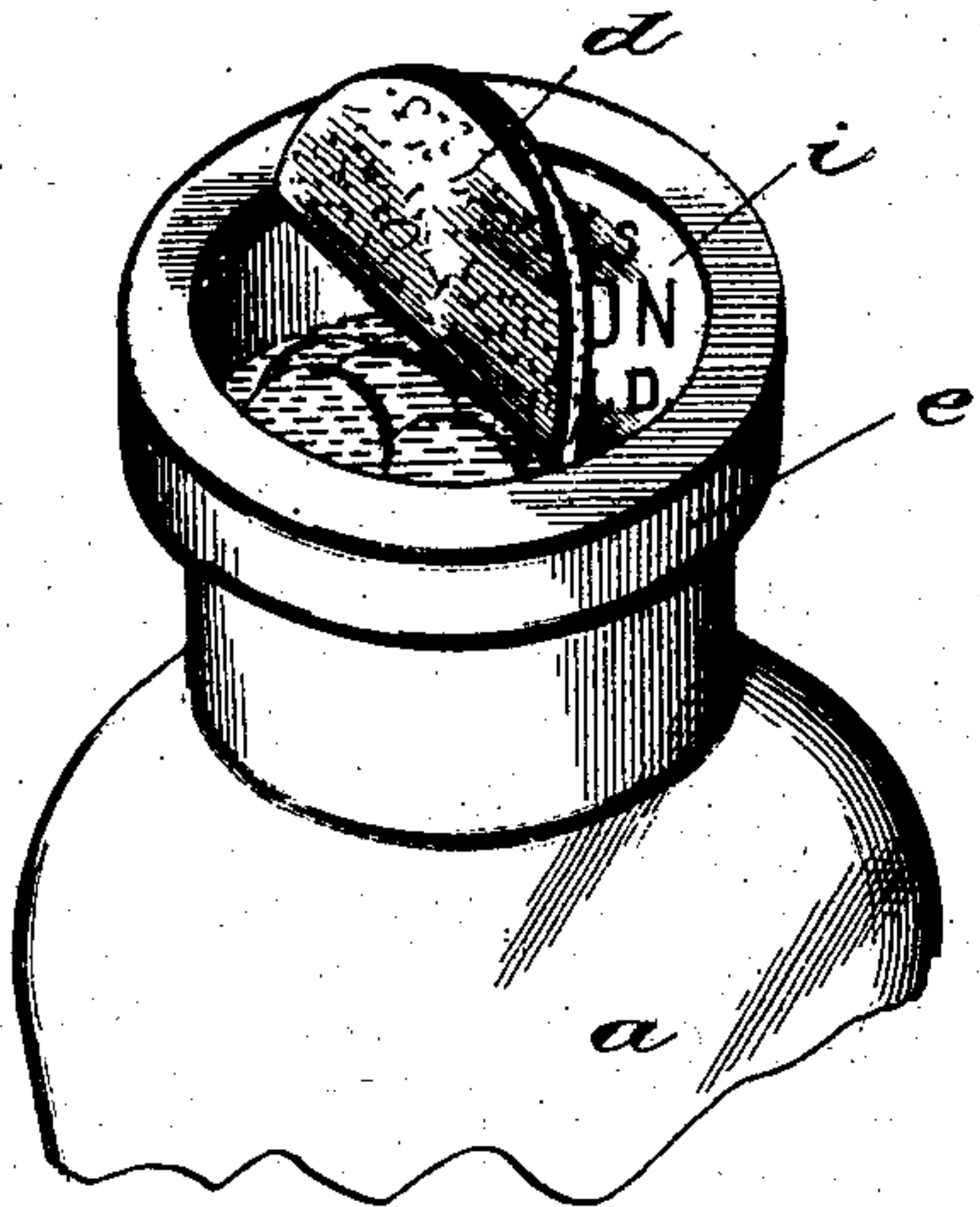


Fig. 4.

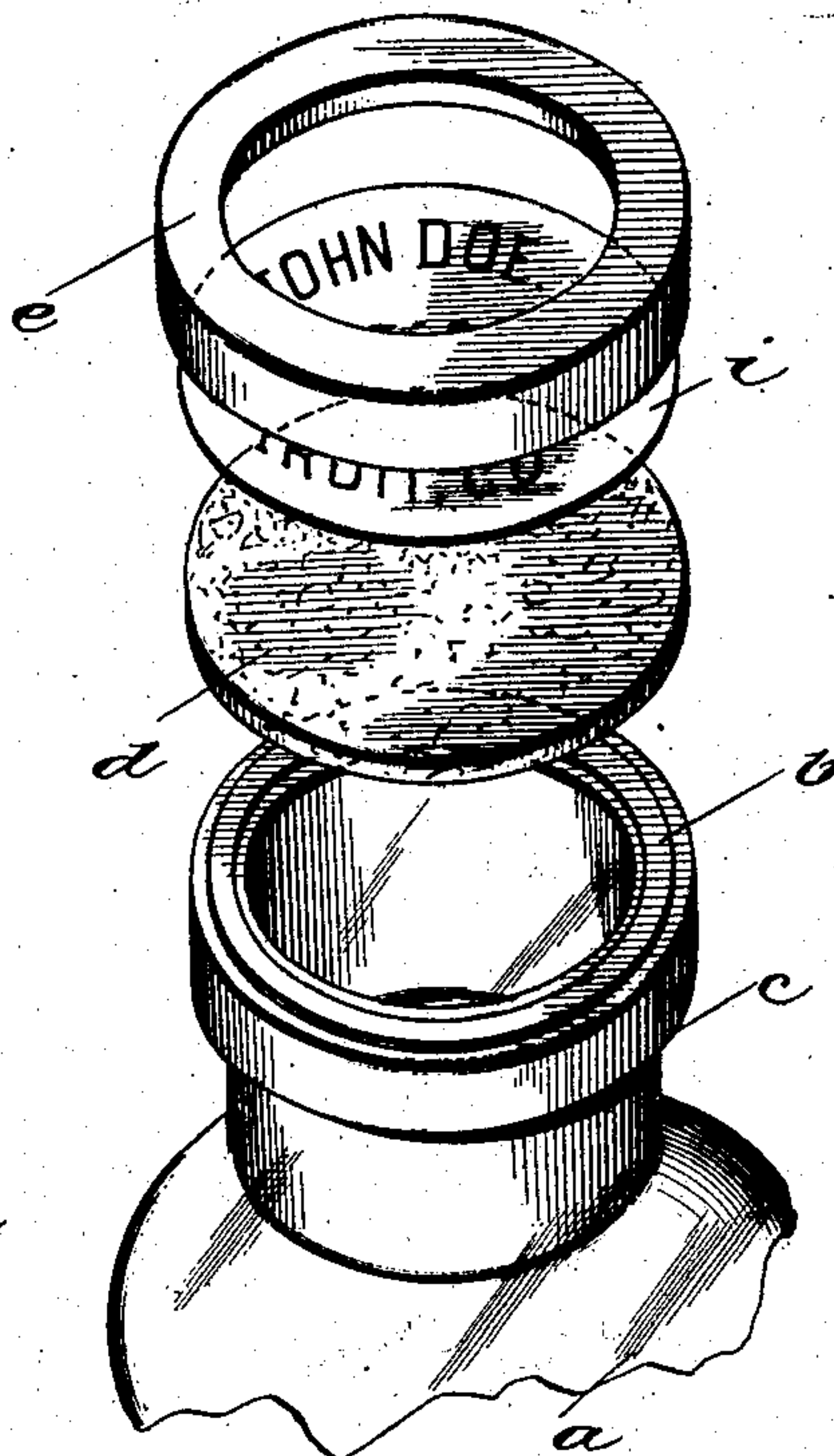


Fig. 2.

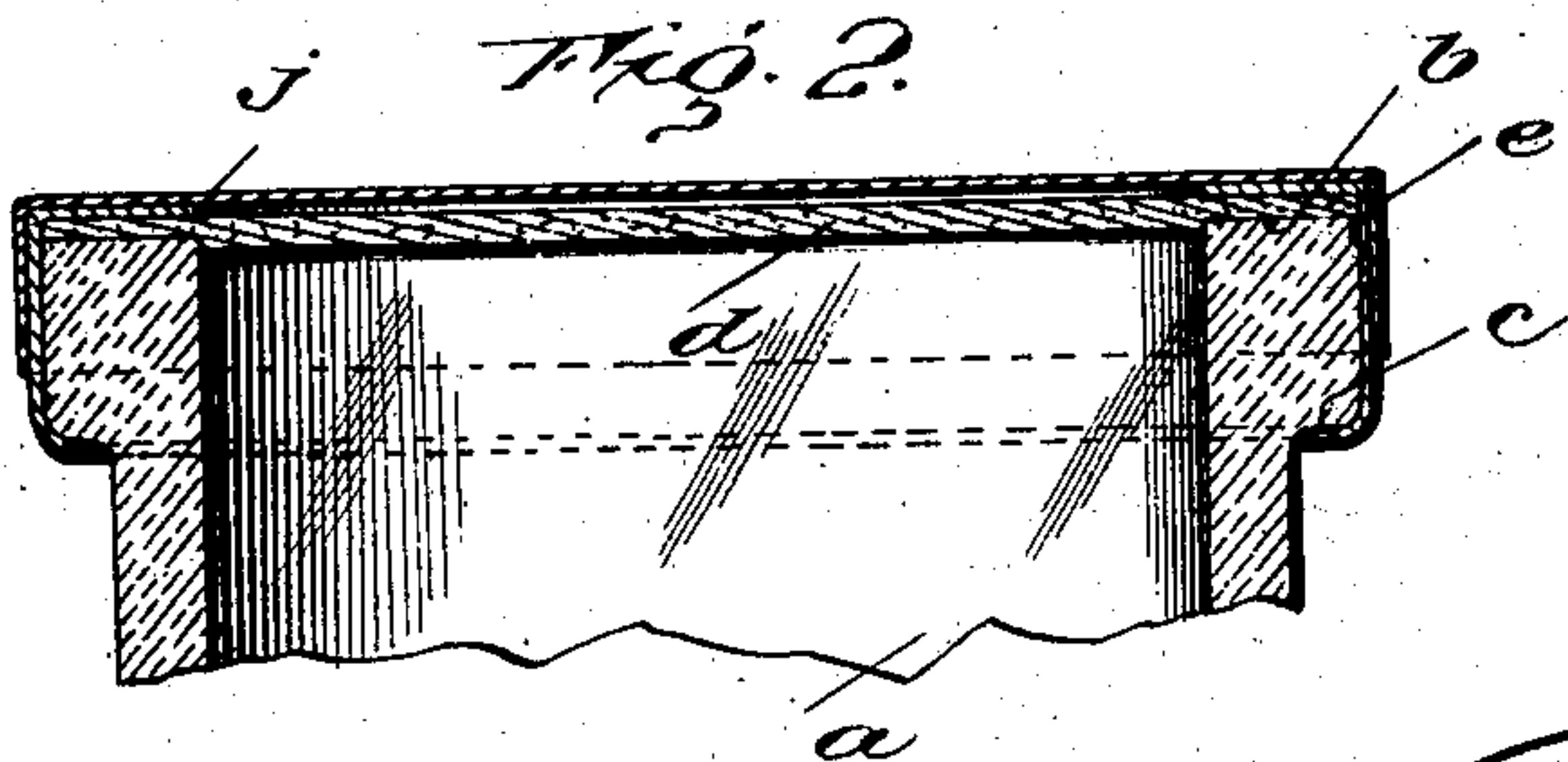


Fig. 3.

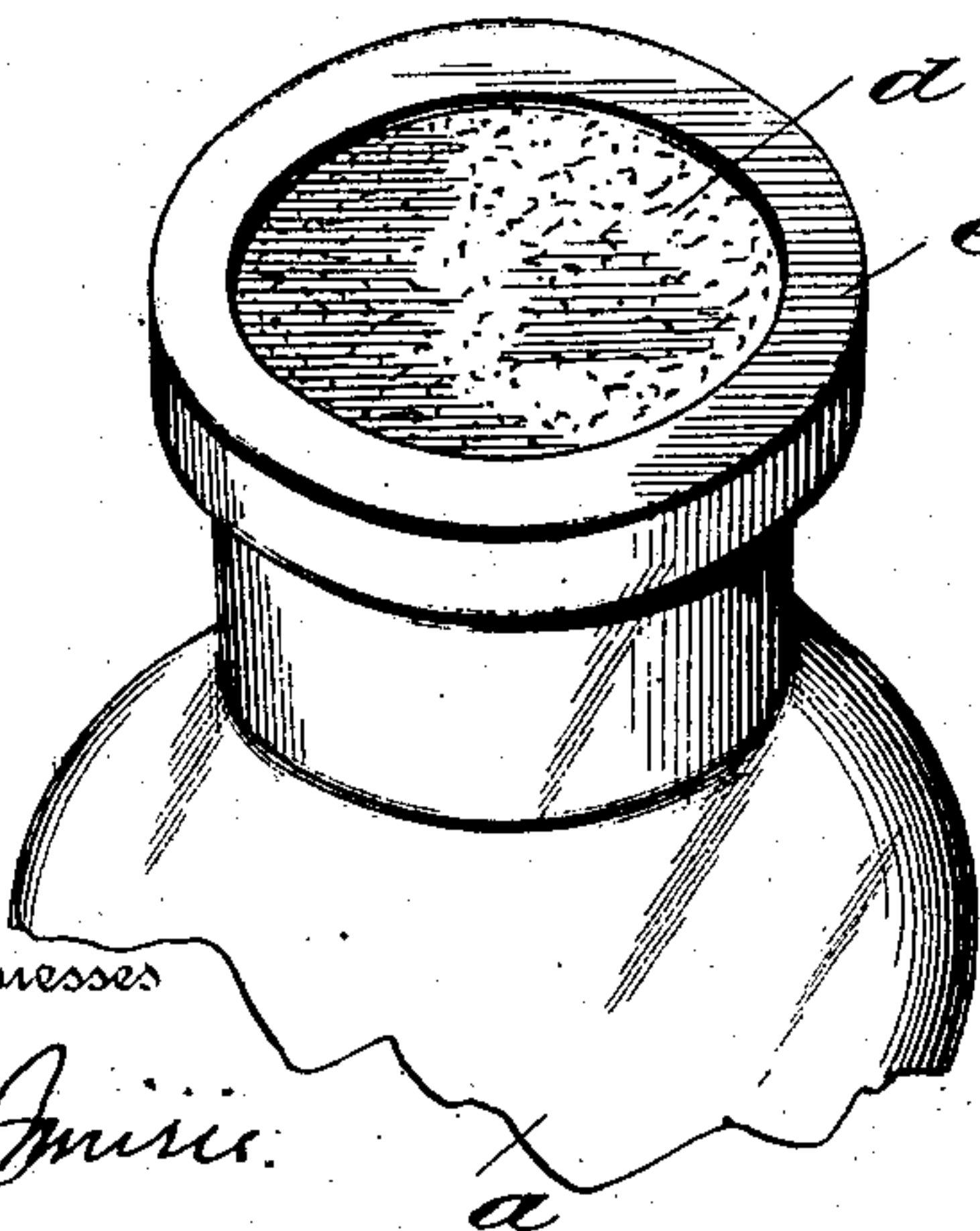
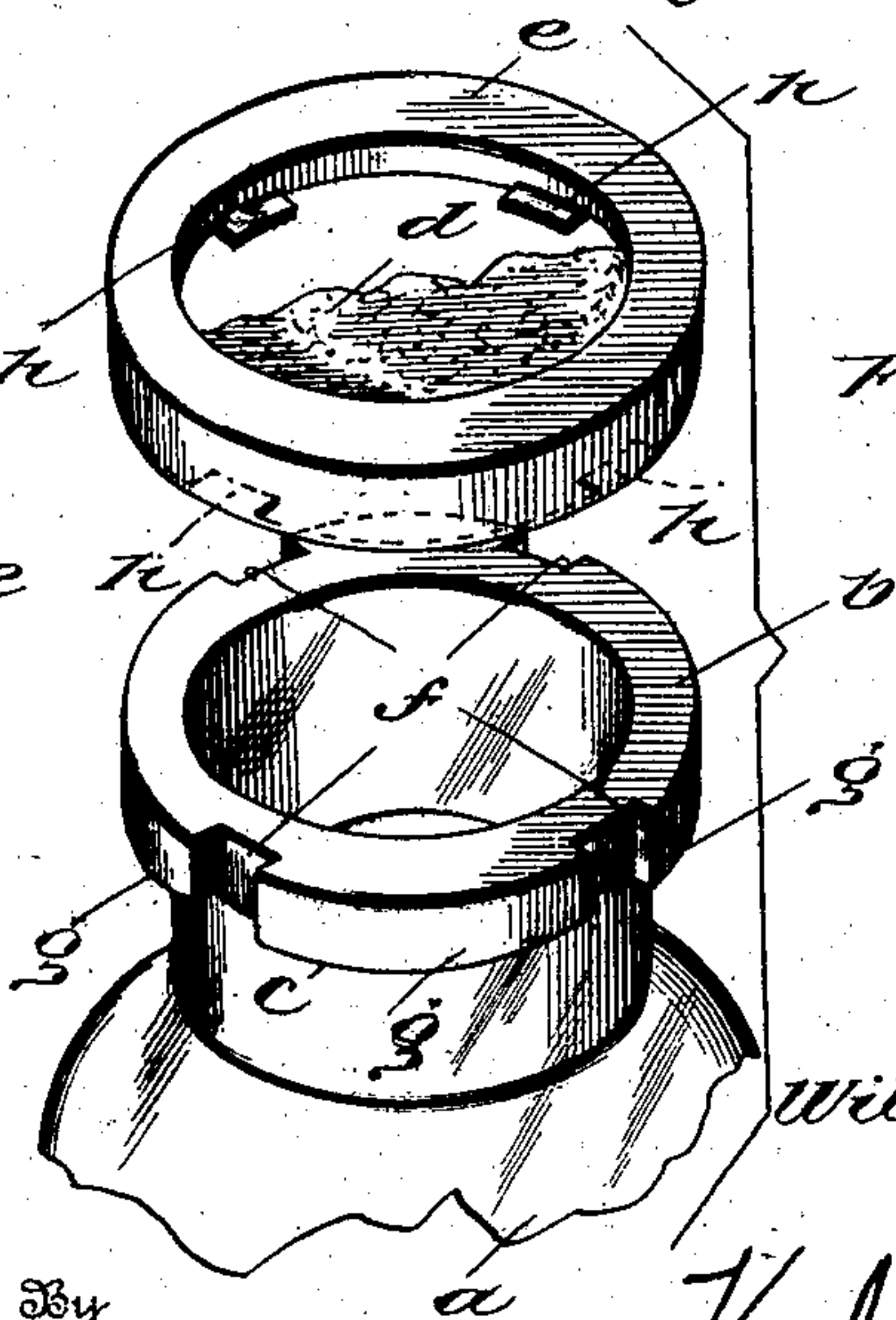


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM E. HEATH, OF BALTIMORE, MARYLAND.

SEALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 741,607, dated October 13, 1903.

Application filed October 27, 1902. Serial No. 128,987. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. HEATH, a citizen of the United States, residing at Baltimore city, Maryland, have invented certain new and useful Improvements in Sealing Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in sealing devices, and more particularly to an improved seal peculiarly applicable to large-mouth vessels or bottles.

An object of the invention is to provide an exceedingly effective and simple yet economical sealing device which will maintain a tight seal and can be easily and quickly opened.

The invention consists in certain novel features in construction and in combinations of parts, as more fully and particularly explained and pointed out hereinafter.

Referring to the accompanying drawings, which merely show one form of my invention as an example for purposes of explanation from among other forms within the spirit and scope of my invention, Figure 1 is a perspective view of a jar or large-mouth bottle or receptacle to which my improved seal has been applied, the seal being shown broken and opened to permit access to the interior or contents of the jar, an advertising paper sheet being shown on the sealing-disk. Fig. 2 is a vertical sectional view through the mouth portion of the jar, the seal being shown applied, an outside cap being shown, the advertising sheet of paper not being shown. Fig. 3 is a perspective of the mouth portion of the jar, showing the seal applied to tightly close and seal the jar, the advertising paper sheet not being shown. Fig. 4 is a perspective view showing the mouth portion of the jar, the compressible impervious sealing-disk, the cylindrical locking-cap before being spun or turned under, and the advertising paper sheet, said parts being shown separated. Fig. 5 is a perspective view showing a cap and sealing-disk separated from the jar-mouth, the sealing-disk being partially broken away and a modified arrangement of cap and jar-mouth being shown.

In the drawings, *a* is a bottle, jar, or other receptacle, the specific example being illustrated as a large-mouth bottle or jar. The jar can be of any suitable and desirable construction, having a mouth-opening surrounded by the annular top edge *b* and an exterior annular flange or shoulder *c* a distance below the top edge *b*, the exterior of the bottle-mouth between the shoulder *c* and top edge *b* being usually cylindrical, although I do not wish to so limit my invention. The top edge *b* can be formed in any suitable manner and of various configurations to coact with the sealing-disk in increasing the tightness of the seal or joint, and hence I do not wish to limit my invention to the top edge *b* with the flat face, as shown.

d is an imperforate flat disk, of impervious or waterproof yet soft and compressible material which can be easily and quickly perforated and cut or severed with a light thin blade or by the application of slight force to any suitable instrument for punching through or perforating and then cutting or severing the disk. I prefer to form the disk of a thick heavy soft compressible paper fabric treated with suitable materials or substances which soak into the fabric and render the same impervious to moisture and air without so hardening the fabric as to render the same incapable of being compressed to form and maintain a tight seal and permit easy puncturing and severing of the disk. I have discovered that thick or heavy soft commercial blotting-paper can be so treated as to render the same impervious without destroying the peculiar qualities of softness and the ease with which such paper fabric can be severed or torn. Blotting-paper so treated can be produced very economically and yet attains superior and exceedingly advantageous results when employed as a compressible sealing-disk. A seal employing such blotting-paper as a sealing medium can be produced at a minimum cost and yet attains certain material new results or advantages. I employ the term "blotting-paper" herein in a broad sense to include soft or compressible paper treated to render the same impervious and the equivalents thereof.

The blotting-paper sealing-disk *d* is shown of a diameter approximately equal to the ex-

ternal diameter of the top or sealing edge *b* of the jar-mouth, on which the under face of the flat disk rests, the disk completely spanning, covering, and closing the mouth or top of the jar. Suitable devices or means are employed to press the disk down on the top edge of the jar-mouth to maintain the seal and hold and lock the disk and preferably to expose the central portion of the disk to display a separate advertising-sheet or to permit a blade or other instrument being forced through the disk and then moved around the inner surface or circle of the jar-mouth to sever or cut out or partially cut around the exposed portion of the disk, thereby breaking the seal and opening the jar. As an example which can be employed for this purpose I show a locking-cap *e*, having its center cut out to form the annular top horizontal flange and the depending cylindrical portion. This cap is formed of suitable ductile or non-spring thin sheet metal, and the cylindrical portion thereof is of such diameter as to snugly fit the exterior cylindrical portion of the jar-mouth between the top edge *b* and shoulder *c*, and the said depending cylindrical (or otherwise-shaped vertical) portion of the cap is of greater length than the distance from the shoulder *c* to the top edge *b*. The top flange of the cap is preferably radially as wide as or greater in width radially than the top edge *b*, so that the inner circle of said flange will be above and not of less diameter than the circle of the inner edge of the top edge *b*.

In applying the sealing device the compressible disk can be forced or slipped into the cap until it rests against the flat under face of the top flange of the cap. The cap is then slipped onto the exterior of the bottle-mouth until the disk rests on the top edge *b*. The necessary pressure can then be applied to the top flange of the cap and directly over the top edge *b* to force down the cap and compress the disk *d* to the desired degree between top edge *b* and the top flange of the cap. While the cap is thus held down compressing the disk the lower end of the cap, projecting below the plane of shoulder *c*, can be spun or otherwise turned in tightly under said shoulder to permanently (or otherwise) fasten the cap on the jar-mouth and to maintain the disk tightly compressed between the cap-flange and top edge *b*, forming the tight seal. If desired, the cap can be otherwise fastened to the jar or can be removable and otherwise fastened and drawn down to compress the disk. For instance, in Fig. 5 I show the jar-mouth formed with external vertical slots or notches *f*, with the under edges of the rim between the notches inclined to form cams or inclines *g*. The cap is shown at its lower end formed with inwardly-projecting radial lugs *h*, spaced to pass down through notches *f* as the cap is slipped onto the jar-mouth and to move under the inclines *g* and draw the cap down when the same is

moved axially on the jar, as will be readily understood by those skilled in the art.

If desired, advertising matter can be imprinted on a circular sheet or disk of paper *i*, (see Figs. 1 and 4,) and such disk can be loosely placed on the disk *d*, so as to be held or clamped between the sealing-disk and flange of the cap, leaving the advertising matter exposed at the open top or center of the cap. Also, if desired, an outside impermeate sheet-metal or other cap *j* can be slipped over the mouth of the jar when sealed, as shown in Fig. 2. Such cap would fit down on the vertical portion of cap *e* and cover the top thereof and the disk and be held in place by friction. Such cover or exterior cap might be used to protect the paper advertising-sheet hereinbefore mentioned and the sealing-disk where the jars are to be steamed after filling and sealing. However, I do not wish to limit myself to the employment of the advertising-sheet nor the exterior cap, although advantages are attained in my combination by employing the paper advertising-sheet.

The nature of the impervious blotting-paper disk is such that a small blade or other pointed instrument can be very easily pushed through the disk and moved around the inner edge of the cap, using the same as a guide, to cut out or sever the central portion of the disk. The central portion of the disk can be cut completely out to open the jar or can be cut partially around and turned up, as shown in Fig. 1, and then turned down to again close the opening, and thus serve as a cover to protect any material which may remain in the jar.

In the construction shown in Figs. 1 to 4 the cap *e* remains on the jar after the breaking of the seal, the cap being usually drawn in one continuous piece and non-severable, although my invention is not so limited.

The blotting-paper disk is usually tightly compressed against the inner surface of the cylindrical portion of the cap and down over the inner edge of the top of the bottle-mouth, as well as between the flange of the cap and the top edge of the bottle-mouth, so that the sealing-disk is laterally as well as vertically compressed and the jar is sealed along different lines or points.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A sealing device comprising a cap, in combination with the sealing means adapted to be held compressed by the cap to maintain a tight seal and composed of the compressible impervious paper or fabric, substantially as described.

2. A sealing device comprising a sealing-disk of compressible paper treated to render the same impervious, and means for locking and maintaining said disk compressed against the sealing edge of a bottle or jar and effecting the tight seal, substantially as described.

3. A sealing device comprising an imperforate impervious sheet of compressible readily punctured and severed paper, and means for locking and holding said sheet against the top edge of the jar-mouth to cover and close said mouth and maintain a tight seal, said means exposing the central portion of said sheet so that the sheet can be cut around said central portion enabling the same to be turned up to open the jar, substantially as described.

4. A receptacle having a top sealing edge around its mouth and exterior holding means below said edge, in combination with an imperforate readily punctured and cut sheet of flexible paper fabric treated to render the same impervious, said sheet covering the mouth of the receptacle and resting on said sealing edge and uncovered at its under face, and a cap having a depending annular flange within which said sheet is frictionally held and which is locked under said exterior holding means to hold down the cap maintaining the seal, said cap having the top annular horizontal flange bearing down on the portion of the sheet over said top edge and leaving the remainder of the sheet exposed to permit passage therethrough of a cutting instrument for severing the sheet around the inner edge of said flange, substantially as described.

5. A jar having a top sealing edge around its mouth and an exterior annular locking-shoulder below said top edge, in combination with a sheet of compressible impervious paper fabric covering the jar-mouth and resting on said top edge, and a metal cap having a depending annular flange permanently spun under said shoulder while the cap is held down under pressure to compress said sheet against said edge to form the tight seal, said cap having the lateral annular top flange

above the said edge and said sheet, the said cap being open within said flange to permit puncturing and cutting the sheet to open the jar independently of the cap, substantially as described.

6. A receptacle having a top annular sealing edge around its mouth and an exterior locking-shoulder below said edge, in combination with a flexible imperforate sheet of impervious compressible paper fabric closing the mouth of the receptacle and resting on said edge, and a metal locking-cap having an exterior depending annular flange engaging said shoulder to lock the cap compressing said sheet, said cap having the lateral annular top flange above and compressing said sheet and forming the central top opening of the cap approximately of the same diameter as the internal diameter of the mouth of the receptacle whereby the inner surface of the mouth of the receptacle can form a guide for the cutting instrument when passed through said sheet and cutting the exposed center thereof, substantially as described.

7. A jar-seal comprising a cylindrical metal cap having an annular top flange forming the top opening, an imperforate sheet of compressible impervious severable paper fabric fitted in said cap and against said flange, and the imperforate exterior cover removably fitted over the end of said cap and covering the exposed portion of said sheet, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. HEATH.

Witnesses:

OSCAR DIKEMAN,
MARION C. LIGHTOWLER.